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OPERATING SUMMARY

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EMO TWP.

WATER POLLUTION CONTROL PLANT
and WATER TREATMENT PLANT

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EMO TWP.

WATER POLLUTION CONTROL PLANT

and

WATER TREATMENT PLANT



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MINISTRY OF THE ENVIRONMENT

1973 ANNUAL OPERATING SUMMARY

prepared by
Plant Performance Unit
TECHNICAL SERVICES BRANCH
T. Cross, Director

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CONTENTS

WATER TREATMENT PLANT

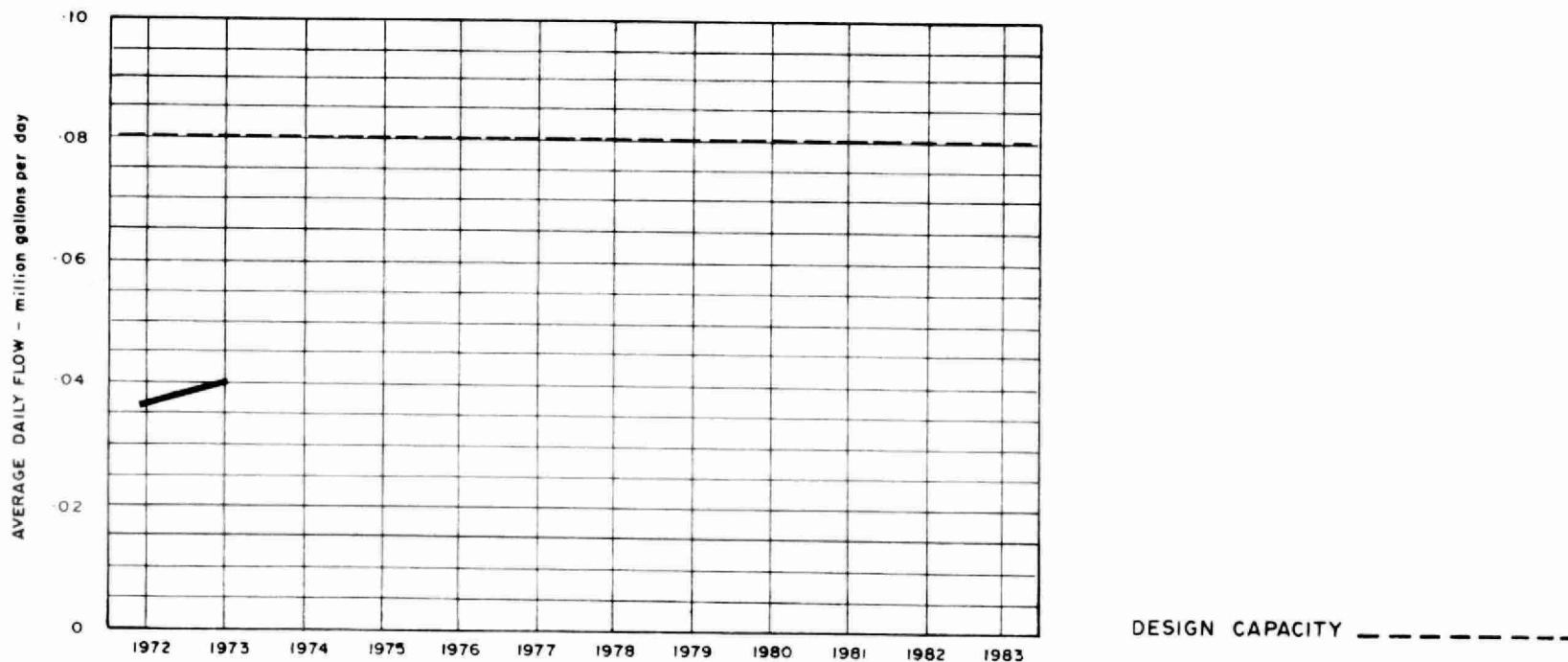
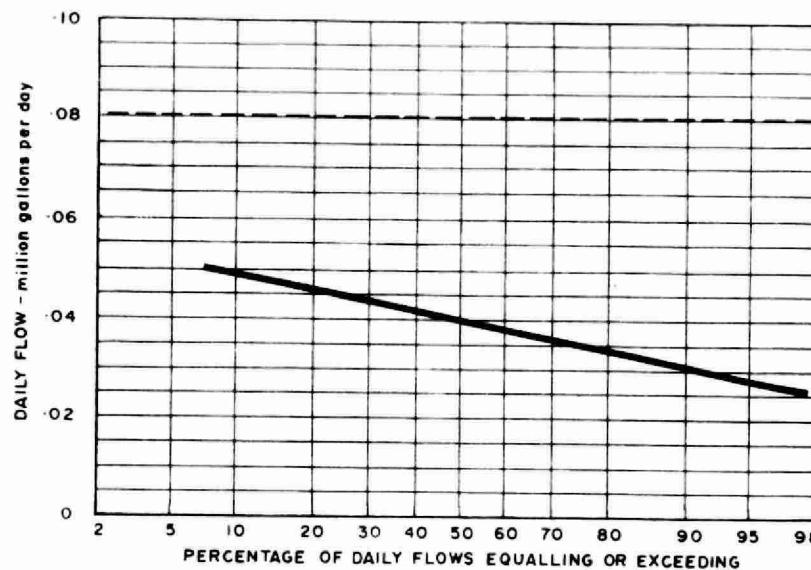
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WATER POLLUTION CONTROL PLANT

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WATER TREATMENT PLANT

PROCESS DATA FLOWS



PLANT PERFORMANCE

MONTH	FLOWS				RAW WATER		TREATED WATER					
	TOTAL PLANT OUTPUT million gallons	AVERAGE DAILY FLOW million gallons	MAXIMUM DAY'S FLOW million gallons	MAXIMUM RATE mgd	TURBIDITY (AVERAGE) FTU	COLOUR (AVERAGE) App. units	TURBIDITY		COLOUR		TEMPERATURE	
							AVERAGE FTU	MAXIMUM FTU	AVERAGE App. units	MAXIMUM App. units	AVERAGE °F	MAXIMUM °F
JAN	1.49	0.048	0.06		3.3	30	0.6	1.0	<5	<5	35	36
FEB	1.28	0.046	0.05		3.9	30	0.5	0.9	<5	<5	35	35
MAR	1.24	0.040	0.04		5.0	35	0.7	1.2	<5	<5	37	42
APR	1.06	0.035	0.04		11.7	50	0.6	1.5			43	45
MAY	1.14	0.037	0.05		9.0		0.9	1.5			51	60
JUNE	1.16	0.039	0.06		7.0	70	0.8	1.3			64	68
JULY	1.36	0.044	0.07		7.0		1.0	3.5			70	71
AUG	1.30	0.042	0.09		6.0		0.5	0.9			71	71
SEPT	1.00	0.033	0.04		6.9	50	0.6	1.2			63	72
OCT	1.18	0.038	0.06		10.0	70	0.7	1.3		5	59	59
NOV	1.09	0.035	0.04		3.5	30	0.8	1.4		<5	42	51
DEC	1.16	0.037	0.04		3.0	40	0.7	1.4		<5	36	37
TOTAL	14.46											
AVG.		0.040	MAXIMUM 0.09	MAXIMUM	6.4	45	0.7	MAXIMUM 3.5	<5	MAXIMUM 5	50	MAXIMUM 72

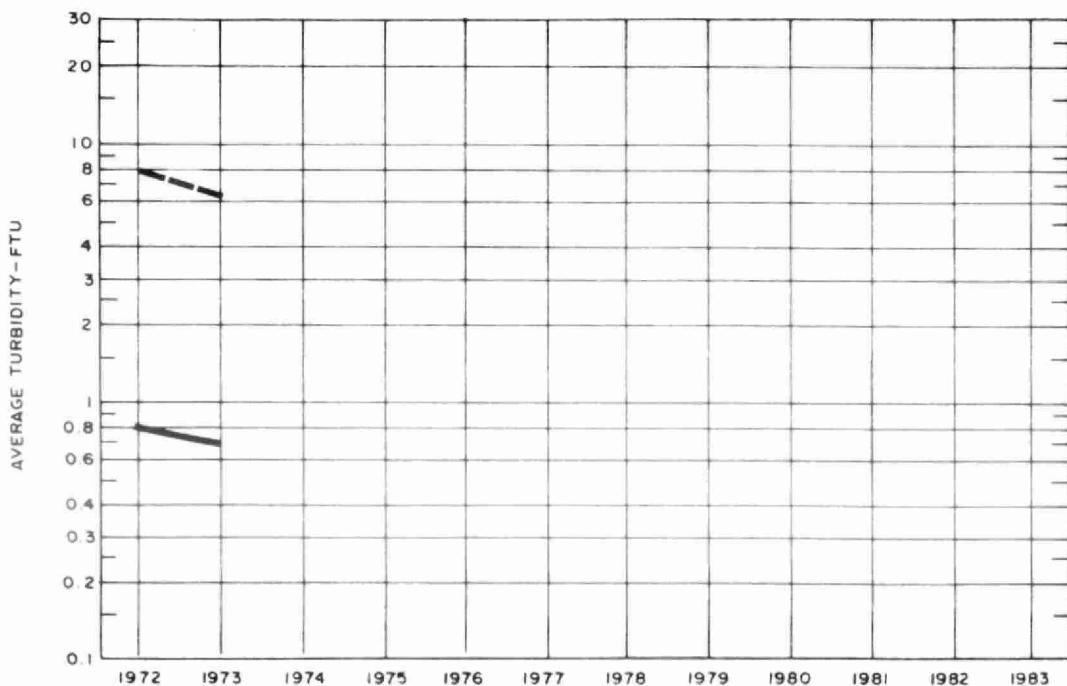
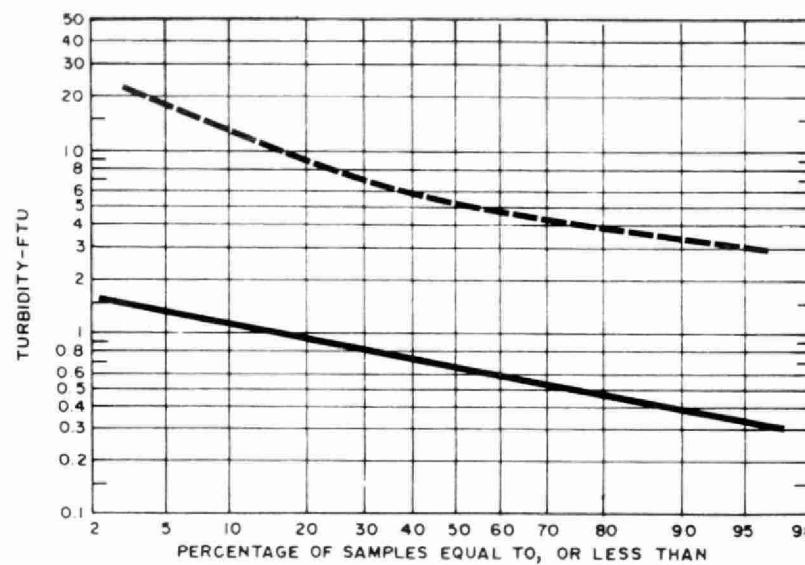
CHLORINATION and DISINFECTION

MONTH	RAW WATER					PLANT EFFLUENT		DISTRIBUTION SYSTEM		CHLORINATION			
	NUMBER OF SAMPLES HAVING TOTAL COLIFORM ORGANISMS PER 100 ml OF					NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	NUMBER OF SAMPLES TAKEN	NUMBER HAVING COLIFORM ORGANISMS	TOTAL AMOUNT OF CHLORINE USED pounds	Dosage		Residual in Plant Effluent mg/l
	0	1 - 3	4 - 32	33 - 320	> 320						Pre - mg/l	Post - mg/l	
JAN				1	4	10	0	18	0	75	3.0	1.0	0.5
FEB				1	3	7	0	16	0	68			0.6
MAR					3	8	0	14	0	75	4.0	1.0	0.6
APR					4	8	0	16	0	68			0.6
MAY					4	4	0	15	0	112			0.6
JUNE					4	4	0	16	0	128			0.7
JULY					5	5	0	26	0	166	6.0	3.0	0.7
AUG					2	2	0	10	0	119	5.0	3.0	0.6
SEPT					3	3	0	16	0	74	5.0	1.0	0.6
OCT					4	4	0	18	0	82			0.7
NOV					4	4	0	19	0	70	4.0	1.0	0.7
DEC				0		0	0	3	0	58			
TOTAL				2	40	59	0	187	0	1095			
AVG.	895 (NOTE - Average shown is the GEOMETRIC MEAN)									3.0 pounds per day	4.0	1.7	0.6

TREATMENT DATA

MONTH	FILTER OPERATION		CHEMICALS USED					
	AVERAGE FILTER RUN hours	BACKWASH WATER mil. gal.	ALUM		POLYMER		SODA ASH	
			AMOUNT USED gallons	DOSAGE mg/l	AMOUNT USED pounds	DOSAGE mg/l	AMOUNT USED pounds	DOSAGE mg/l
JAN	4	0.190	200	87	5.0	0.3	1000	67
FEB	4	0.140	150	75	3.5	0.3	700	55
MAR		0.137	120	63	3.5	0.3	600	48
APR	5	0.090	147	90	3.0	0.3	800	75
MAY	5	0.095	175	100	4.0	0.3	900	79
JUNE		0	165	92	4.0	0.3	900	77
JULY		0	210	101	5.0	0.4	1100	81
AUG		0	190	95	4.5	0.3	1000	77
SEPT	5	0.090	170	111	4.0	0.4	900	90
OCT	5	0.110	185	102	4.5	0.4	900	76
NOV		0.126	175	105	5.0	0.4	800	73
DEC		0.108	180	106	3.0	0.3	900	82
TOTAL		1.086	2067		49.0		10500	
AVG.	5			93		0.3		72

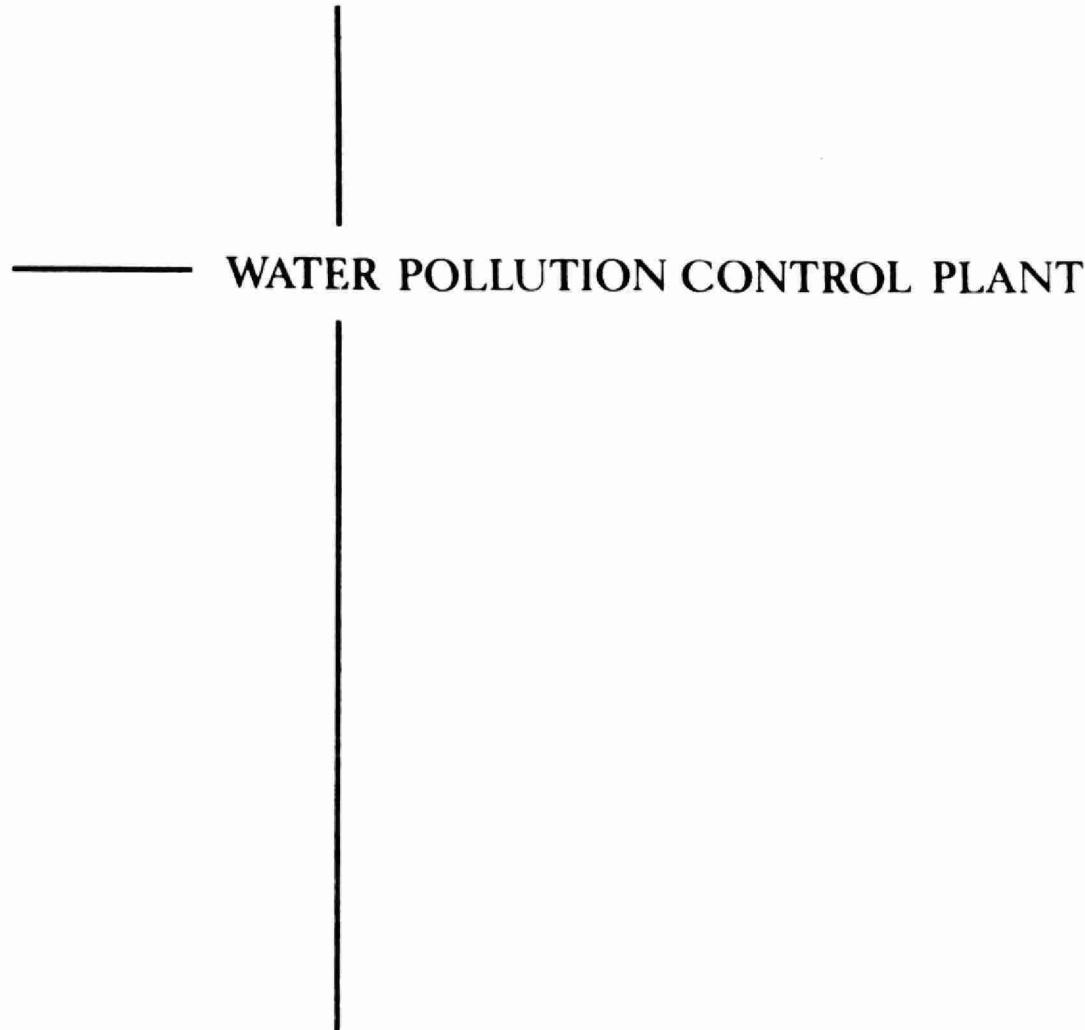
TURBIDITY



PLANT INFLUENT ——————
PLANT EFFLUENT ——————

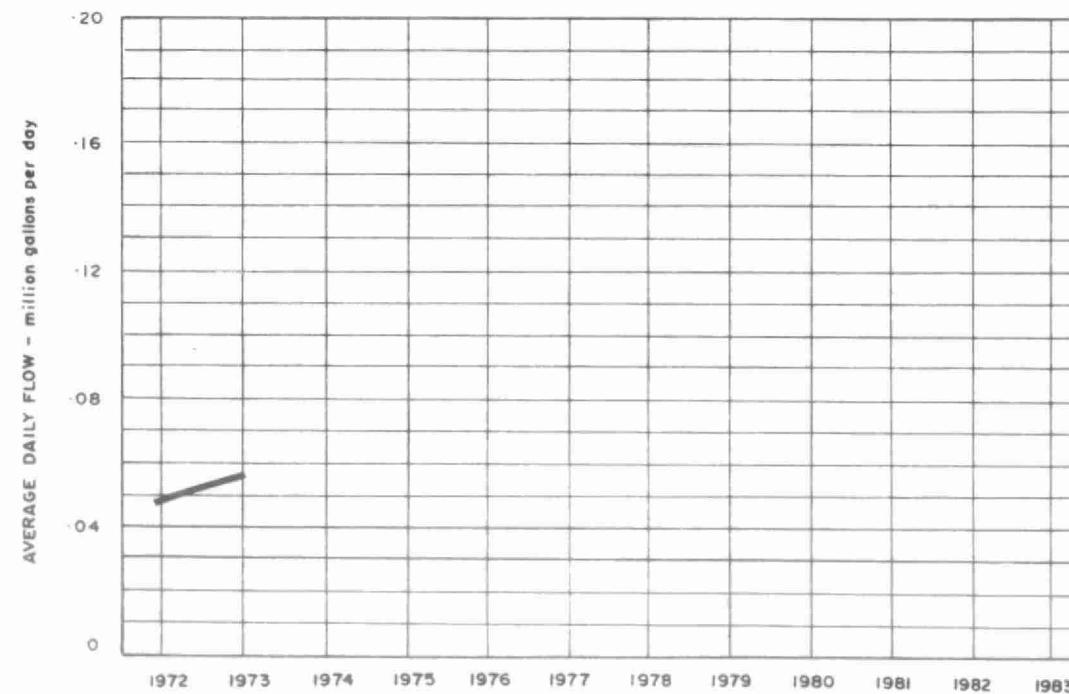
WATER QUALITY

PROPERTY	RAW WATER				TREATED WATER				DESIRABLE STANDARDS
	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	NUMBER OF SAMPLES	AVERAGE	MAXIMUM	MINIMUM	
HARDNESS in mg/l as CaCO ₃	10	30	44	24	22	31	54	24	80 - 100
ALKALINITY in mg/l as CaCO ₃	10	28	42	24	22	53	82	32	30 - 100
IRON in mg/l Fe	10	0.39	1.30	0.15	22	<0.05	0.20	<0.05	Less than 0.3
CHLORIDE in mg/l Cl ⁻	10	1	0.3	<1	22	7	13	3	Less than 250
pH in pH units	10	7.0	7.4	6.3	22	7.2	8.0	4.7	7.0 - 8.5
COLOUR in apparent units	10	44	70	30	22	<5	5	<5	Less than 1



— WATER POLLUTION CONTROL PLANT

PROCESS DATA FLOWS



PLANT PERFORMANCE

MONTH	FLOWS			BIOCHEMICAL OXYGEN DEMAND			SUSPENDED SOLIDS			PHOSPHORUS	
	TOTAL FLOW million gallons	AVERAGE DAY mil. gal	MAXIMUM DAY mgd	INFLUENT mg/l	EFFLUENT mg/l	LOADING pounds/acre/day	INFLUENT mg/l	EFFLUENT mg/l		INFLUENT mg/l P	EFFLUENT mg/l P
JAN	1.67	0.054		290		16	320			33	
FEB	1.37	0.049		190		9	85			19	
MAR	1.53	0.050		140		7	260				
APR	1.18	0.039									
MAY	1.36	0.045		70	32	3	710	90		10	4.7
JUNE	1.47	0.049		140		7	90			32	
JULY	1.77	0.057									
AUG	2.43	0.078									
SEPT	2.20	0.073		260		19	430			8.7	
OCT	2.62	0.084		46		4	60			6.2	
NOV	1.74	0.056									
DEC	1.40	0.045									
TOTAL	20.74	-	-	-	-	-	-	-	-	-	-
AVG.		0.057	MAXIMUM	162	32	9	279	90		18	4.7
No. of Samples	-	-	-	7	3	- -	7	3	- -	6	3

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